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19. ABSTRACT (Continue on reverse if necessary and identify by block number) This research note includes copies of all test instruments used in a recent U.S. Army Research Institute-sponsored evaluation of the Intervehicular Information System (IVIS) using the Simulation Networking Developmental (SIMNET-D) test bed. IVIS is a computerized command, control, and communication (C <sup>3</sup> ) system proposed for the Block II M1 Abrams tank. This report is a companion report to an ARI technical report describing the actual IVIS evaluation (i.e., Du Bois & Smith, in preparation).			
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# INSTRUMENTS FOR EVALUATING THE INTERVEHICULAR INFORMATION SYSTEM

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## Introduction

To facilitate effective small unit command, control, and communication (C<sup>3</sup>) performance, the U.S. Army Armor Center is currently assessing the benefits of including an automated C<sup>3</sup> display, the Intervehicular Information System (IVIS), in the upgraded Block II M1 Abrams tank. IVIS is a computer-based distributed information management system proposed to improve lower echelon C<sup>3</sup> performance. In support of this effort, the U.S. Army Research Institute Field Unit-Fort Knox and its supporting contractor, Universal Energy Systems, conducted a simulation-based evaluation of IVIS (Du Bois and Smith, in preparation) entitled "Simulation Based Assessment of Automated Command, Control, and Communication Capabilities for Armor Crews and Platoons: The Intervehicular Information System".

The IVIS evaluation compared the performance of tank crews and platoons using a prototype IVIS with the performance of crews and platoons using conventional C<sup>3</sup> and navigation tools. The research was conducted early in the IVIS materiel acquisition process and evaluated the IVIS concept as represented in reconfigured Simulation Network-Developmental (SIMNET-D) M1 simulators. The evaluation included (a) an assessment of the tank crew and platoon performance effects of IVIS; (b) an examination of the unique training requirements of IVIS; and (c) an evaluation of soldier use of, and reactions to, the IVIS soldier-machine-interface (SMI).

This Research Note documents the instruments used in the IVIS evaluation (Du Bois and Smith, in preparation). Nine instruments are included in this note. In addition to a biographical questionnaire, the instruments include a land navigation skills test, IVIS knowledge and performance tests, IVIS training and interface design questionnaires, a task difficulty questionnaire, and a SIMNET knowledge reactions questionnaire. While many of these instruments were developed specifically to support this research, others were modified from previous research. A brief description of each instrument and its development and implementation is provided. For a more complete description see Du Bois and Smith (in preparation).

### Biographical Questionnaire

A biographical questionnaire was developed to gather a variety of background data from each soldier subject, including Armor experience, SIMNET experience, Conduct of Fire Trainer (COFT) experience, National Training Center (NTC) experience, Armor education, and computer experience measures. As part of this questionnaire, soldiers signed a release form permitting the research staff to obtain their Armed Services Vocational Aptitude Battery (ASVAR) scores. The biographical questionnaire served not only to describe the soldier subject sample, but also as a

means to evaluate, post hoc, any systematic experience or aptitude differences between test groups not eliminated by treatment randomization.

### Land Navigation Skills Test

To evaluate each tank crew member's map reading and land navigation skills, the Land Navigation Skills Test (LNST), developed by Du Bois and Smith (1989) was used. The 18-item exam assessed soldier proficiency in reading a protractor, determining map distances, locating a grid coordinate on a map, performing resection, intersection, and polar plots, reading a tank odometer, and identifying critical terrain features.

Navigation can be difficult to execute in SIMNET-D given the limited visual cues, closed hatch, and rotatable three vision block cupola of the M1 simulators. The LNST, like the biographical questionnaire, provided a means to evaluate, post hoc, test group navigation skill equivalence.

### SIMNET Knowledge Test

The SIMNET Knowledge Test was a 16-item multiple choice exam. This instrument was developed to evaluate the SIMNET instruction used in the current research and to evaluate, post hoc, treatment group equivalence prior to testing. This test assessed soldier knowledge of critical SIMNET information, including differences between the real M1 tank and the M1 simulator, the operation requirements of the SIMNET Grid Azimuth Indicator and Turret Reference System, and visual system parameters.

SIMNET test items were initially drafted by the loader assistants, training instructors, and test administrators. Throughout pilot testing, soldier subjects and subject matter experts (SMEs) evaluated the draft items, suggesting item revisions and additions.

### IVIS Knowledge Test

The IVIS Knowledge Test assessed tank commander knowledge of IVIS, including task execution procedures, function parameters, and display characteristics. Like the SIMNET Knowledge Test, IVIS test items were initially drafted by loader assistants, training instructors, and test administrators. At least one item was written for each of the tasks and functions supported by IVIS. Throughout pilot testing, soldier subjects and SMEs evaluated and revised the test items, as well as drafted additional items and item responses.

The IVIS Knowledge Test contained 40 multiple choice items. The test was designed to evaluate the degree to which commanders learned IVIS following the experimental IVIS training program. Consistently poor soldier performance on selected items, when supported by other IVIS training effectiveness and performance

measures, could indicate critical IVIS training requirements and concerns.

### IVIS Performance Test

The IVIS Performance Test was a 28-item hands-on test. This test assessed the ability of platoon and crew commanders to perform each of the functions supported by IVIS. At least one item was provided for each IVIS function, including navigation, map manipulation, and reporting functions. Each commander's performance for each task was rated by both the commander and the test administrator. Ratings were based on a seven-point task proficiency scale, with rating anchors ranging from not proficient (1) to expert (7). Raters were instructed to base their ratings on several factors, including the speed, accuracy, and ease by which commanders executed each task. The test administrator assigned to rate each commander was never the in-tank loader assistant assigned to that commander's tank crew.

Initial performance test items were drafted by the loader assistants, training instructors, and test administrators. Structured test forms and rating checklists were developed to support reliable evaluations. Throughout pilot testing efforts, soldier subjects evaluated and revised the test items, rating scale, and administration procedures. The IVIS Performance Test was designed to evaluate the current research's experimental IVIS training program and identify critical IVIS training requirements and concerns.

### IVIS Training Reactions Questionnaire

The IVIS Training Reactions Questionnaire was a four-part questionnaire. It was designed to assess commander reactions to the experimental IVIS training program and to identify critical IVIS training requirements and concerns.

In the first section, commanders rated the effectiveness of training provided for each of the functions supported by IVIS. In the second section, commanders rated the effectiveness of the training time allotted throughout the experimental IVIS training program for each IVIS function. For both the training effectiveness and training time ratings, commanders used a seven-point rating scale. Scale anchors ranged from extremely effective (1) to extremely ineffective (7) for the training effectiveness ratings and from considerable more time needed (1) to considerable less time needed (7) for the training time ratings. Both training effectiveness and training time ratings were collected for each IVIS function across the entire training program and by training phase, including the classroom training, research assistant practice, crew practice exercise, and platoon practice mission.

In section three, commanders rated 16 statements regarding the IVIS training program, including statements about the effectiveness of the loader assistants, training instructors, and

classroom lecture materials. Commanders indicated their level of agreement with each statement using a five-point Likert scale ranging from strongly disagree (1) to strongly agree (5). The final section contained nine partial statements requiring commander completion. Commanders completed statements such as "The practice sessions with the research assistants could be improved by \_\_\_\_\_." Reactions questionnaire items were initially drafted by the loader assistants, training instructors, and test administrators. Throughout IVIS pilot testing, soldier subjects evaluated and revised the questionnaire items.

### IVIS Interface Questionnaire

The IVIS Interface Questionnaire assessed soldier reactions to the IVIS interface design and other display characteristics. Soldier responses, coupled with performance and other data, were ultimately used to identify potential IVIS design and operation requirements.

The questionnaire contained five sections. In the first section, commanders indicated their level of agreement with 69 statements about the IVIS interface, such as "The location of the commander's IVIS display in the M1 simulator was acceptable." Soldiers rated each item using a five-point Likert scale. In the second, third, and fourth sections, commanders rated the ease-of-learning, ease-of-use, and helpfulness, respectively, of each of the functions supported by IVIS. Commanders used a seven-point scale for these ratings. For the ease-of-learning and ease-of-use ratings, scale anchors ranged from extremely easy (1) to extremely difficult (7). For the helpfulness ratings, scale anchors ranged from extremely helpful (1) to extremely unhelpful (7). In the final section, commanders completed six open-ended questions about the IVIS system. For example, commanders were asked to indicate the most and least beneficial IVIS functions and to recommend ways to improve IVIS.

IVIS questionnaire items were initially drafted by the loader assistants, test administrators, and Armor SMEs. Some items were adapted from questionnaires used in previous research (e.g., Du Bois & Smith, 1989; Lickteig, 1986; Schwab, 1988). The soldiers participating in the pilot test revised and evaluated these draft items.

### Task Difficulty Questionnaire

The Task Difficulty Questionnaire, adapted from Du Bois and Smith (1989), required commanders to assess the difficulty they experienced performing 27 C<sup>3</sup> tasks. Commanders rated the difficulty they experienced in SIMNET-D (in their test condition) and the average difficulty of those tasks in the real tank (based on field experiences). Ratings were collected using a seven-point scale, with anchors ranging from extremely easy (1) to extremely difficult (7).

The questionnaire was primarily designed to evaluate differences in task difficulty or workload resulting from operating with IVIS. However, the task difficulty data could also indicate potential IVIS training requirements and concerns.

#### SIMNET Questionnaire

A short two-part questionnaire, the SIMNET Questionnaire, assessed soldier reactions to the use of SIMNET-D for evaluating IVIS and other Armor combat developments. In the first section, commanders rated their level of agreement with respect to five statements about SIMNET-D breakdowns and fidelity. In the second section, commanders completed five open-ended questions about SIMNET-D's limitations, advantages, and new equipment evaluation usefulness.

## References

- Du Bois, R. S., & Smith, P. G. (in preparation). Simulation based assessment of automated command, control, and communication capability for armor crews and platoons: The intervehicular information system (ARI Technical Report). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.
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- Lickteig, C. W. (1986). User interface requirements for Battlefield Management System (BMS) (ARI Research Product No. 86-25). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. (AD A174 811)
- Schwab, J. R. (1988). User Assessment of the Intervehicular Information System (IVIS) (Technical Report No. 88-0000866). Fort Knox, KY: U.S. Armor and Engineer Board.



Appendix A  
Biographical Questionnaire

Name \_\_\_\_\_

Date \_\_\_\_\_

Duty Position for this Experiment \_\_\_\_\_

**IVIS EXPERIMENT  
BIOGRAPHICAL QUESTIONNAIRE**

1. **AGE:** \_\_\_\_\_ years
2. **CURRENT ARMY GRADE:** E-\_\_\_\_\_ or O-\_\_\_\_\_
3. **TOTAL TIME IN SERVICE:**
  - A. Enlisted? \_\_\_\_\_ years \_\_\_\_\_ months
  - B. Commissioned? \_\_\_\_\_ years \_\_\_\_\_ months
4. **TOTAL TIME IN ARMOR:** \_\_\_\_\_ years \_\_\_\_\_ months
5. **MOS LEVEL:** MOS-\_\_\_\_\_ - \_\_\_\_\_ If Officer: 12A or 12B
6. **PRESENT TANK DUTY POSITION (circle one):**
  - A. Tank Driver
  - B. Tank Loader
  - C. Tank Gunner
  - D. Tank Commander
  - E. Platoon Sergeant
  - F. Platoon Leader
  - G. Other (please specify: \_\_\_\_\_; also **check** the highest tank position for which you are qualified)
7. **EXPERIENCE IN EACH TANK POSITION:**
  - A. Experience as Tank Driver: \_\_\_\_\_ years \_\_\_\_\_ months
  - B. Experience as Tank Loader: \_\_\_\_\_ years \_\_\_\_\_ months
  - C. Experience as Tank Gunner: \_\_\_\_\_ years \_\_\_\_\_ months
  - D. Experience as Tank Commander  
(Do not include time as  
Plt. Ldr. or Plt. Sgt.): \_\_\_\_\_ years \_\_\_\_\_ months
  - E. Experience as Plt. Sgt.: \_\_\_\_\_ years \_\_\_\_\_ months
  - F. Experience as Plt. Ldr.: \_\_\_\_\_ years \_\_\_\_\_ months

## BIOGRAPHICAL QUESTIONNAIRE

8. **FORMAL TANKER MILITARY COURSES COMPLETED** (check all that apply):

\_\_\_\_\_ AIT/OSUT      \_\_\_\_\_ BNCOC      \_\_\_\_\_ ANCOC  
\_\_\_\_\_ AOBC      \_\_\_\_\_ AOAC  
\_\_\_\_\_ Other (please specify: \_\_\_\_\_)

9. **TIME SINCE LAST PARTICIPATED IN AN ACTUAL FIELD TRAINING EXERCISE**  
(do not count NTC) **AS A TANKER:**

\_\_\_\_\_ years  
\_\_\_\_\_ months  
\_\_\_\_\_ days

10. **NUMBER OF TIMES PARTICIPATED AS A TANKER IN NTC EXERCISES WITH A ROTATING UNIT:**

\_\_\_\_\_ times (rotations)

11. **NUMBER OF HOURS PREVIOUSLY SPENT ON SIMNET:**

\_\_\_\_\_ hours

12. **NUMBER OF HOURS PREVIOUSLY SPENT ON COFT GUNNERY EXERCISES:**

\_\_\_\_\_ hours

13. **IN GENERAL, DESCRIBE YOUR PREVIOUS EXPERIENCE WITH COMPUTERS:**

\_\_\_\_\_ No Experience (Never Use Computers)  
\_\_\_\_\_ Limited Experience (Rarely Use Computers)  
\_\_\_\_\_ Some Experience (Occasionally Use Computers)  
\_\_\_\_\_ Considerable Experience (Frequently Use Computers)

Appendix B  
Land Navigation Skills Test

## LAND NAVIGATION SKILLS TEST

### INSTRUCTIONS

This test is designed to assess those skills which are necessary to effectively navigate in a SIMNET environment. This test contains 18 questions requiring free response. Please read each question carefully and write your answers on the answer sheet provided. You have a SIMNET SPECIAL MAP, pencil, marker, protractor, and scratch paper for use in completing this test. When you finish, bring your test materials to one of the test administrators. If you should have any questions about a particular test item while completing this exam, please feel free to ask one of the test administrators.

## LAND NAVIGATION SKILLS TEST

SITUATION A: You are a tank commander in Co A, 2d Bn, 24th Armor. You are currently located at ES793971. Answer the following questions.

1. What natural terrain feature are you currently located on?
2. What is the elevation in meters of your current own-tank location?
3. What type of road is closest to your current own-tank location, a paved or unpaved road?
4. The combat trains are located at grid ES80859130. From your current location and disregarding any tree-lines or man-made structures, do you have a direct line of sight to the combat trains location?
5. Your battalion commander is located 4910 meters from your location on a mil azimuth of 1720 mils. What is the six-digit grid coordinate of your battalion commander's location?
6. Given an order, you move from your present location to a road junction at grid ES85279195. What is the straight line distance in meters from your previous location (ES793971) to your new location (ES85279195)?
7. What is the azimuth heading in mils from your previous location (ES793971) to your new location at grid ES85279195?
8. If your tank odometer reading at the start of movement was 0842 0 and you moved in a straight line from your previous location (ES793971) to your new location (ES85279195), what would your tank odometer reading be when you reached your new location?

## LAND NAVIGATION SKILLS TEST

SITUATION B: Your platoon is defending in sector. You have relocated to a battle position located at grid ES880950. Answer the following questions.

1. What natural terrain feature are you currently located on?
2. What is the eight-digit grid coordinate of the man-made structure closest to your current own-tank location?
3. What is the elevation in meters of your current own-tank location?
4. You identify enemy vehicles at an azimuth of 5590 mils from your location. After lasing to the enemy location, you determine your distance from the enemy vehicles to be 3100 meters. What is the six-digit grid coordinate of the enemy location?
5. If you were to travel in a straight line from your present location (ES880950) to the enemy location and your tank odometer reading at movement start was 9111 1, what would your tank odometer reading be when you reached the enemy grid location?
6. The combat trains are located at ES898941. What is the back azimuth heading in mils from your current location at ES880950 to the trains?

## LAND NAVIGATION SKILLS TEST

SITUATION C: Your platoon has just completed an intense battle with an enemy company. Unsure of your exact grid location, you identify a bridge that you know to be at grid ES874860. Answer the following questions.

1. You determine the azimuth heading from your own-tank location to the bridge to be 1540 mils. What is the back azimuth heading in mils from your location to the bridge?
2. You lase to the bridge and determine the range to be 2980 meters. What is the six-digit grid coordinate of your current location?
3. Name and give the number of all terrain features, both man-made and natural, located in grid square ES8990.
4. What is the contour interval of the SIMNET SPECIAL MAP you are currently using?



Appendix C  
SIMNET Knowledge Test

## **IVIS EXPERIMENT**

### **TRAINING EVALUATION - KNOWLEDGE TEST**

#### **Instructions**

This test contains multiple choice questions designed to assess your knowledge of the SIMNET system. This test contains 16 items about the SIMNET system. Please read each question carefully and then darken the block on the answer sheet which indicates the letter of the correct answer. If you change your answer, please carefully erase your earlier response. Take your time taking this test and please, when you have finished all of the test questions on each test, take a moment to review your answers to ensure you made no errors using the answer sheet. A research assistant will also review your answer sheet for any obvious errors after you complete each test.

Remember, the purpose of this test is to evaluate the IVIS training program and not you. If you cannot answer a question, you may leave it blank. Take your time and try to do the best you can. If you should have questions while you're completing this test, please feel free to ask for help. Be sure to include your name, date, and your duty position for this experiment on the answer sheet. And, please do not mark in the test booklet.

**IVIS EXPERIMENT**  
**TRAINING EVALUATION - KNOWLEDGE TEST**

**SIMNET Questions**

1. The SIMNET Grid Azimuth Indicator
  - a. can be used anytime during a SIMNET exercise, whether your tank is moving or stationary
  - b. can only be used when your tank is moving
  - c. can only be used when your tank is stationary
  - d. can only be used when your tank is on a road
  
2. The SIMNET commander's cupola
  - a. can be traversed in a complete circle or 360 degrees
  - b. is stationary and cannot be traversed
  - c. can only be traversed 150 degrees right and 150 degrees left from the center
  - d. can only be traversed 90 degrees right and 90 degrees left from the center
  
3. The SIMNET Turret Gun-to-Hull Reference Indicator displays
  - a. your current ammo status
  - b. the position of your tank's gun tube in relation to the hull
  - c. the direction your tank is travelling
  - d. the position of your tank's gun tube in relation to north on the compass
  
4. The SIMNET Grid Azimuth Indicator displays you tank's
  - a. grid location
  - b. hull heading in degrees
  - c. gun tube heading in mils
  - d. hull heading in mils
  
5. The SIMNET M1 fires only
  - a. SABOT rounds
  - b. SABOT and HEAT rounds
  - c. HEAT rounds
  - d. SABOT, HEAT and COAX rounds

## TRAINING EVALUATION - KNOWLEDGE TEST

6. If all of your SIMNET tank's vision blocks are completely black, your tank is
  - a. in need of washing
  - b. in a thunderstorm
  - c. driving at night
  - d. destroyed or damaged
7. The SIMNET Grid Azimuth Indicator gives you a reading in
  - a. miles
  - b. mils
  - c. degrees
  - d. kilometers
8. In SIMNET, you can
  - a. drive your tank up vertical (90 degree) cliffs
  - b. drive your tank on top of water
  - c. use the gunner's thermal imaging system (TIS)
  - d. lase to enemy targets
9. In SIMNET, you can never see farther than
  - a. 3,500 meters from your location
  - b. 2,000 meters from your location
  - c. 1,000 meters from your location
  - d. 5,000 meters from your location
10. The SIMNET commander's cupola has
  - a. a blind spot of 300 degrees
  - b. a blind spot of 60 degrees
  - c. no blind spot
  - d. a blind spot of 180 degrees
11. Readings from the SIMNET Grid Azimuth Indicator will appear on the
  - a. Gunner's Auxiliary Sight (GAS) picture
  - b. Gunner's Primary Sight Extension (GPSE) picture
  - c. Commander's vision blocks
  - d. TC's Master Control Panel

## TRAINING EVALUATION - KNOWLEDGE TEST

12. How long does it take you to redistribute a single SABOT round from the SIMNET ammo storage compartment to the loader's ready rack?
  - a. three seconds
  - b. eight seconds
  - c. forty seconds
  - d. three minutes
13. Enemy vehicles in SIMNET are
  - a. green
  - b. black
  - c. brown
  - d. red
14. Which of the following statements is true?
  - a. you maximum viewing distance is greater in SIMNET than in the real world
  - b. the sun, shadows, and moon are shown in SIMNET
  - c. there are more vision blocks in the SIMNET commander's cupola than in the real M1 cupola
  - d. the SIMNET M1 tank has an odometer
15. To start the SIMNET M1 tank, you need to
  - a. turn on the turret power, then turn on the vehicle master power, then press the "Start" button
  - b. turn on the vehicle master power, press the "Start" button, then turn on the turret power
  - c. put your key in the ignition, then, while pumping the accelerator, turn the key to the right
  - d. have your crew push the tank until the engine revs up
16. In SIMNET, you will get stuck if you cross
  - a. light blue water
  - b. dark blue water
  - c. the road without first looking both ways for any oncoming traffic
  - d. any water, light or dark blue

Appendix D  
IVIS Knowledge Test

## **IVIS EXPERIMENT**

### **TRAINING EVALUATION - KNOWLEDGE TEST**

#### **Instructions**

This test contains multiple choice questions designed to assess your knowledge of IVIS. This test contains 40 items about IVIS. Please read each question carefully and then darken the block on the answer sheet which indicates the letter of the correct answer. If you change an answer, please carefully erase your earlier response. Take your time taking this test and please, when you have finished all of the test questions on each test, take a moment to review your answers to ensure you made no errors using the answer sheet. A research assistant will also review your answer sheet for any obvious errors after you complete each test.

Remember, the purpose of this test is to evaluate the IVIS training program and not you. If you cannot answer a question, you may leave it blank. Take your time and try to do the best you can.

If you should have questions while you're completing this test, please feel free to ask for help. Be sure to include your name, date, and your duty position for this experiment on the answer sheet. And, please do not mark in the test booklet.

## IVIS EXPERIMENT

### TRAINING EVALUATION - KNOWLEDGE TEST

#### IVIS Questions

1. IVIS displays your tank grid location
  - a. only when you press the **NAV** button
  - b. at 10 second intervals
  - c. continuously on both the driver and TC display
  - d. continuously on only the TC display
2. The "OVERLAY ON" box in the **MAP** menu should always be marked with an "X" if you want to
  - a. receive any FM radio traffic from your commanding officer
  - b. send graphic overlays to another TC
  - c. receive graphic overlays from your commanding officer
  - d. overlay various terrain features on the IVIS map
3. When your tank is operating in a platoon, your IVIS map display shows the current location of
  - a. all enemy and friendly vehicles
  - b. friendly vehicle icons in your platoon
  - c. only the platoon leader's and company commander's vehicles
  - d. only your vehicle icon
4. In SIMNET, you will hear a beep over your headphones if
  - a. you have a telephone call
  - b. you are being sent a message over the IVIS display
  - c. your commander is trying to reach you on the company FM radio net
  - d. you make an IVIS entry error
5. The messages or reports you receive on the IVIS display are divided into three groups according to the
  - a. length of the report
  - b. intelligence of the TC who sent the report
  - c. priority of the report
  - d. length of time passed since the report was transmitted



## IVIS TRAINING EVALUATION - KNOWLEDGE TEST

6. The "LOCK" function under the **SCRL** key main menu locks
  - a. the IVIS display's keys so that they no longer work
  - b. the IVIS map at its present location
  - c. the scale of the IVIS map at its present size
  - d. your gun tube on target
7. The IVIS "Own Location and Heading Window" displays your tank location as
  - a. an eight-digit grid coordinate
  - b. a four-digit grid coordinate
  - c. an encoded eight-digit grid coordinate
  - d. a street address
8. IVIS stands for
  - a. Interesting Vehicle Investigating Service
  - b. InterVehicular Information System
  - c. Internal Vehicle Imaging System
  - d. In Vehicle It Sits
9. The IVIS "Own Location and Heading Window" shows the hull reference heading in
  - a. mils
  - b. centimeters
  - c. miles
  - d. degrees
10. To input a route waypoint, what IVIS function key would you use?
  - a. **NAV**
  - b. **MAP**
  - c. **REP**
  - d. **SCRL**

## TRAINING EVALUATION - KNOWLEDGE TEST

11. The IVIS "Own Location and Heading Window" shows your tank's location and updates it every
  - a. 10 seconds
  - b. 10 meters
  - c. meter
  - d. kilometer
12. Which function is not offered under the **MAP** key?
  - a. "FEATURES"
  - b. "LOS"
  - c. "ZOOM"
  - d. "ROUTE DESIGNATION"
13. You are scrolling the IVIS map to locate a new waypoint. You notice a solid red triangle on the edge of the IVIS map. This triangle points to the direction of
  - a. the platoon leader's tank
  - b. your tank
  - c. the nearest restroom
  - d. enemy forces
14. The IVIS "LOS" function shows both red lines and blue lines. A red line between your tank and a feature on the IVIS map indicates
  - a. you should be able to see the feature
  - b. that a tank just fired off a round
  - c. there is a road between you and the feature
  - d. you should not be able to see the feature
15. The Line of Sight function can evaluate the line of sight from your vehicle to any point
  - a. up to 10 miles away
  - b. up to 3 kilometers away
  - c. up to 10 feet away
  - d. in the SIMNET world

## TRAINING EVALUATION - KNOWLEDGE TEST

16. You just destroyed six enemy tanks. What IVIS report should you send to your commander?
  - a. "SPOT"
  - b. "CFF"
  - c. "LOG"
  - d. "SITREP"
  
17. You are running low on fuel. What kind of IVIS report is sent to alert your commander of this problem?
  - a. "SPOT"
  - b. "CALL FOR FUEL"
  - c. "CONTACT"
  - d. "SITREP"
  
18. An artillery barrage has just fallen near your location. Which IVIS report should you send to your commander?
  - a. "SHELL"
  - b. "ADJUST"
  - c. "CFF"
  - d. "SPOT"
  
19. You have requested a call for fire (CFF) and the artillery fell 500 meters to the right of your intended target. Using IVIS, what type of report do you send to redirect the artillery fire?
  - a. "CONTACT"
  - b. "LOG"
  - c. "ADJUST"
  - d. "SHELL"
  
20. When you send a message on IVIS, the message is transmitted
  - a. in 40 seconds
  - b. in 60 seconds
  - c. in 15 seconds
  - d. in less than a second

## TRAINING EVALUATION - KNOWLEDGE TEST

21. You have scrolled your IVIS map so that your tank icon is no longer displayed. What **SCRL** function should you press to move the IVIS map so that your tank icon is located in the center?
- a. "LOCK"
  - b. "DRAG"
  - c. "HOME"
  - d. "ZOOM"
22. What do you do to send the driver a waypoint under the "ROUTE DESIGNATION" function?
- a. step out of the simulator and hand it to him
  - b. touch the waypoint, then touch the **SEND** key
  - c. touch the waypoint, then touch the **DELETE** key
  - d. darken the circle located next to the waypoint you wish to send
23. What are the two ways you can enter enemy grid coordinates for a spot report on IVIS?
- a. touch the map or type the grid coordinate
  - b. touch the map or press the azimuth indicator
  - c. lase to the enemy or touch the azimuth indicator
  - d. touch the map or lase to the enemy
24. The **ADJUST** menu lets you adjust mortar fire left/right or up/down
- a. in 100 meter increments
  - b. 100, 200 or 500 meters
  - c. in 10 meter increments
  - d. in any increments you choose
25. Which IVIS function would you use to remove all labels or symbols, except dotted and solid lines, from the IVIS map at the same time?
- a. "SYMBOLS"
  - b. "LABELS"
  - c. "SPOTS"
  - d. "FEATURES"

## TRAINING EVALUATION - KNOWLEDGE TEST

26. Which IVIS map scale allows you to see approximately a three by three kilometer (3km x 3km) map?
- a. 1: 25,000
  - b. 1: 50,000
  - c. 1:125,000
  - d. 1:250,000
27. When the "as of:" section of an IVIS situation report reads "-15", the report reflects an activity which
- a. occurred 15 minutes ago
  - b. occurred 15 seconds ago
  - c. involved destroying 15 vehicles
  - d. will occur in 15 minutes
28. You receive a contact report on IVIS from a commander in your platoon. While reading the report, you notice a hollow red triangle at the edge of your map. What is this hollow red triangle doing there?
- a. pointing to the reported enemy contact
  - b. pointing to the commander who sent the report
  - c. pointing to your tank
  - d. indicating that another IVIS report is being sent to you
29. Some of the IVIS reports can be prepared using one of two different IVIS report keys. Those reports which can be created with two different IVIS keys include
- a. calls for fire and logistics reports
  - b. calls for fire and spot reports
  - c. contact reports and calls for fire
  - d. call for fire adjustments and spot reports

## TRAINING EVALUATION - KNOWLEDGE TEST

30. The IVIS "VEL" function allows you to scroll the map various distances with one touch of the IVIS screen. This map scrolling rate is determined by
- a. the distance between where you touch the IVIS map and the center of the IVIS map
  - b. how hard you touch the IVIS map
  - c. your position in the platoon
  - d. the number of terrain features portrayed on the IVIS map
31. When the IVIS map is being scrolled
- a. you cannot receive an IVIS-based report from another commander
  - b. the IVIS "Own Location and Heading Window" does not work
  - c. a small box will appear on the top right corner of the IVIS map to show the current location of the center of the map
  - d. you cannot use the FM radio
32. The IVIS contact report function lets you enter
- a. type of enemy vehicle and location
  - b. enemy location and activity
  - c. number of enemy vehicles and type
  - d. a call for fire
33. After touching the "Select Map Object" bar in the IVIS "LABELS" or "SYMBOLS" menu, IVIS map symbols and labels can be deleted:
- a. one at a time by first touching the symbol or label, and then pressing the **DELETE** key
  - b. one at a time by first touching the symbol or label, and then pressing the **CANCEL** key
  - c. all at once by using the "RECOVER SPOTS" function
  - d. one at a time by first touching the symbol or label, and then pressing the **EXIT** key

## TRAINING EVALUATION - KNOWLEDGE TEST

34. Roads on the IVIS map are:
- a. black
  - b. blue
  - c. red
  - d. purple
35. The IVIS driver's display shows the driver all but one of the following
- a. the direction you should steer to reach the next waypoint
  - b. your current tank hull heading
  - c. your tank's distance from the next waypoint
  - d. your current tank grid coordinate
36. What color must a dotted or solid line symbol be before it can be deleted?
- a. red
  - b. black
  - c. green
  - d. brown
37. The fully automated CONTACT report, the red star, automatically appears on your IVIS map whenever
- a. your tank's main gun is fired and the round lands within 3000 meters from your tank
  - b. a friendly tank, other than your own, fires a round which impacts within 3000 from your tank
  - c. the company commander is sending you an overlay
  - d. enemy vehicles close within 3000 meters of your tank
38. When you touch the map to ADJUST indirect fire, you touch the map at
- a. the location of the target
  - b. the location where the rounds are sensed
  - c. the company commander's tank
  - d. your own tank

## TRAINING EVALUATION - KNOWLEDGE TEST

39. You receive a SPOT REPORT from your wingman tank. To save the report on your IVIS map display you should relay the report to
- a. higher
  - b. grid
  - c. lower
  - d. the Defense Mapping Agency
40. You receive a contact report from another unit. The location of the reported enemy contact is off your IVIS map. Which IVIS key should you touch to center the IVIS map at the reported enemy location?
- a. "SHOW"
  - b. "HOME"
  - c. "ACT"
  - d. "CANCEL"



Appendix E  
IVIS Performance Test

## IVIS EXPERIMENT

### TRAINING EVALUATION - PERFORMANCE TEST

#### Instructions

You will now complete a performance test as part of the IVIS training evaluation. This performance test consists of 28 items requiring you to perform specific tasks on IVIS. We want to evaluate how effective our one-and-a-half day IVIS training program is. Your performance on each task will be rated on a seven-point scale ranging from NOT PROFICIENT (1) to EXPERT (7). To try to minimize the error in these ratings, both you and I will separately rate your performance of each IVIS task.

It is very important that we discuss this rating scale, so that our ratings can be as accurate as possible. There are several factors of your IVIS task performance which should be considered for each rating. These factors include:

- \* the ease with which you use the touch screen
- \* the speed with which you complete each task
- \* the number of errors committed in completing each task
- \* the smoothness by which you complete the task
- \* the amount of attention which you must direct to complete the task
- \* the amount of prompting you must receive to complete the task
- \* your understanding of the task
- \* whether you can complete the task
- \* the number and length of your hesitations between task steps

---

REVIEW THE RATING SCALE CAREFULLY

---

Before we begin this IVIS performance test, there are three points about this test you should keep in mind. First, the task you will complete are often hypothetical. For example, you will not see any enemy vehicles through your tank's vision blocks or sights. You cannot lase to any targets. Instead, for example, if I ask you to prepare a contact or spot report, you simply touch the map at any location to indicate where the target is.

## TRAINING EVALUATION - PERFORMANCE TEST

Second, only complete tasks which we ask you to do. For example, if I ask you to receive a report, simply receive the report. Do not EXIT or remove the report from the IVIS screen when you're done. Some questions are based on previous questions. Hence, after receiving a report, you may be asked to relay a report to lower commanders.

Third, for any IVIS reports I ask you to prepare, only complete the portions of the report required by the task. For example, unless I specifically ask you to indicate your front line trace (FLOT), do not enter a FLOT in an IVIS situation report (SITREP).

Please remember that the results of this test are being used to evaluate the training you received. We want to know how you can use IVIS following our training program.

Do you have any questions?

Name \_\_\_\_\_

Date \_\_\_\_\_

Administrator \_\_\_\_\_

Tank Duty Position of Subject: PL      PS      TC

### IVIS EXPERIMENT

### TRAINING EVALUATION - PERFORMANCE TEST

#### TC Self-Ratings

- |           |           |
|-----------|-----------|
| 1. _____  | 15. _____ |
| 2. _____  | 16. _____ |
| 3. _____  | 17. _____ |
| 4. _____  | 18. _____ |
| 5. _____  | 19. _____ |
| 6. _____  | 20. _____ |
| 7. _____  | 21. _____ |
| 8. _____  | 22. _____ |
| 9. _____  | 23. _____ |
| 10. _____ | 24. _____ |
| 11. _____ | 25. _____ |
| 12. _____ | 26. _____ |
| 13. _____ | 27. _____ |
| 14. _____ | 28. _____ |

Name \_\_\_\_\_

Date \_\_\_\_\_

Administrator \_\_\_\_\_

Tank Duty Position of Subject: PL PS TC

**IVIS EXPERIMENT**  
**TRAINING EVALUATION - PERFORMANCE TEST**

Research Assistant Ratings

- |           |           |
|-----------|-----------|
| 1. _____  | 15. _____ |
| 2. _____  | 16. _____ |
| 3. _____  | 17. _____ |
| 4. _____  | 18. _____ |
| 5. _____  | 19. _____ |
| 6. _____  | 20. _____ |
| 7. _____  | 21. _____ |
| 8. _____  | 22. _____ |
| 9. _____  | 23. _____ |
| 10. _____ | 24. _____ |
| 11. _____ | 25. _____ |
| 12. _____ | 26. _____ |
| 13. _____ | 27. _____ |
| 14. _____ | 28. _____ |

## IVIS TASK PROFICIENCY SCALE

### -----7 - EXPERT

- This commander will perform the task perfectly. He will commit no errors during the trial. The commander's performance will appear nearly automatic, with no hesitations. The commander will complete all required steps, in sequence, in optimal time. The commander needs no additional training. The commander has an exceptional understanding of the task and could serve as an instructor.

### -----6 - VERY HIGH

- This commander will perform the task with very minor, if any, errors -- corrected immediately. The commander's performance will appear rapid and smooth, but not completely automatic, with minimal hesitations in performing the task. The commander needs only a little reorienting, practice. The commander understands and explains the task very well.

### -----5 - HIGH

- This commander will perform the task with one or two minor errors, always corrected, but not immediately. The commander's performance is rapid and smooth, but requires high attention, and some short hesitations. The commander needs some additional training, practice, but understands and describes the task well.

### -----4 - MODERATE

- This commander will perform the task with at least some errors, most corrected, but not without long hesitations and some searching. The commander will perform the task in less than optimal time, and will be required to devote high attention to the task. The commander needs some additional formal training. The soldier can describe the task adequately, but has trouble actually doing the task.

### -----3 - LOW

- This commander will perform the task with many errors, some caught, with some lengthy hesitations or interruptions in attention. The task will be performed at a slow speed. The commander needs considerable retraining. The commander understands, but cannot complete the task without problems in sequencing.

### -----2 - VERY LOW

- This commander will perform the task with many errors, most not caught, with many hesitations, inappropriate task sequencing, and at a very slow speed. The commander needs extensive retraining. The commander is uncertain about the task and needs help or prompting. The commander will complete the task with great difficulty and with some prompting.

### -----1 - NOT PROFICIENT

- This commander is unable to complete the task correctly. The commander has major gaps, completes several steps out of sequence, and must repeat or restart several times. The soldier is extremely slow, and may not complete the task. The commander needs to be completely retrained -- no training is evident. The commander is confused, lacks understanding, and does not use help or prompting appropriately.

## TRAINING EVALUATION - PERFORMANCE TEST

TASK PROFICIENCY:    7                  6                  5                  4                  3                  2                  1  
                         expert          very high          high          moderate          low          very low          not proficient

- \_\_\_\_ 1.    Point to the IVIS "Own Location and Heading Window."  
            Read and explain the information that is presented in it.

Show location.

Explain that "degs" is the direction in degrees of the hull.

Explain that the grid is the actual location of the tank at that time.

- \_\_\_\_ 2.    Your driver has just identified a tank.  
            Prepare and send an IVIS contact report.

### CON

-OR-

### REP

1. Touch CON
  - a. what - "tank"
  - b. where - touch map
2. Touch ENTER
3. Touch SEND

1. Touch REP
2. Touch CONTACT
  - a. what - "tank"
  - b. where - touch map
3. Touch ENTER
4. Touch SEND

- \_\_\_\_ 3.    You have just identified 1 tank and 1 PC.  
            Prepare and send an IVIS contact report.

### CON

-OR-

### REP

1. Touch CON
  - a. what - "tank"
  - b. where - touch map
2. Touch ENTER
3. Touch SEND
4. Touch CON
  - a. what - "pc"
  - b. where - touch map
5. Touch ENTER
6. Touch SEND

1. Touch REP
2. Touch CONTACT
  - a. what - "tank"
  - b. where - touch map
3. Touch ENTER
4. Touch SEND
5. Touch REP
6. Touch CONTACT
  - a. what - "pc"
  - b. where - touch map
7. Touch ENTER
8. Touch SEND

## TRAINING EVALUATION - PERFORMANCE TEST

TASK PROFICIENCY:    7                    6                    5                    4                    3                    2                    1  
                          expert            very high            high            moderate            low            very low            not proficient

- \_\_\_\_\_ 4.    You have just identified a column of T72s.  
                  Prepare and send an IVIS call for fire on the T72s.

**CFF**

-OR-

**REP**

1. Touch CFF
  - a. what - "tank"
  - b. where - touch map
  - c. check "suppress"
3. Touch ENTER
4. Touch SEND

1. Touch REP
2. Touch CFF
  - a. what - "tank"
  - b. where - touch map
  - c. check "suppress"
3. Touch ENTER
4. Touch SEND

- \_\_\_\_\_ 5.    You misjudged the location of the T72.  
                  Prepare and send an adjust fire report so that the  
                  the artillery fire is redirected 100 meters right and  
                  200 meters up.

**CFF**

-OR-

**REP**

1. Touch CFF
2. check "adjust"
3. Touch ENTER
4. Touch SEND
5. Add/Drop Left/Right \_\_
6. Touch ENTER
7. Touch SEND

1. Touch REP
2. Touch ADJUST
3. Add/Drop Left/Right
  4. Touch ENTER
5. Touch SEND

- \_\_\_\_\_ 6.    Adjust the IVIS map so that only contour lines and roads  
                  appear on the map.

**MAP**

1. Touch EXIT
2. Touch MAP
3. Touch "Features"
4. Touch OK
  - a. touch "grid only"
  - b. touch "vegetation"



## TRAINING EVALUATION - PERFORMANCE TEST

TASK PROFICIENCY:    7                    6                    5                    4                    3                    2                    1  
                         expert            very high            high            moderate            low            very low            not proficient

- \_\_\_\_\_ 7.    You just destroyed 14 T72s which were in a defensive position.  
                 Prepare and send an IVIS spot report.

### REP

1. Touch EXIT
2. Touch REP
3. Touch SPOT
  - a. # - "14"
  - b. what - "tank"
  - c. where - touch map
4. Touch NEXT
5. EN ACT - "defing"
6. Touch NEXT
7. Touch ENTER
8. Touch SEND

- \_\_\_\_\_ 8.    Activate the Line of Sight (LOS) around your vehicle and explain the results.

### MAP

1. Touch MAP
2. Touch LOS
3. Touch OK
4. Explain: Red lines indicate terrain that is visible from your location.  
                 Blue lines indicate terrain that is not visible from your location.

- \_\_\_\_\_ 9.    Remove the line of sight lines from the IVIS map display.

### MAP

1. Touch NONE

## TRAINING EVALUATION - PERFORMANCE TEST

TASK PROFICIENCY:    7                    6                    5                    4                    3                    2                    1  
                         expert            very high            high            moderate            low            very low            not proficient

- \_\_\_\_\_ 10.    You just observed five artillery bombs falling at your location.  
                 Prepare and send the correct IVIS report to your commander to inform him of this situation.

### REP

1. Touch REP
2. Touch SHELL
  - a. # - "5"
  - b. type - "arty"
  - c. where - touch map on own tank
3. Touch ENTER
4. Touch SEND

- \_\_\_\_\_ 11.    Place a Starting Point (SP) symbol on the IVIS map display.

### MAP

1. Touch EXIT
2. Touch MAP
3. Touch SYMBOLS
4. Touch SP
5. Touch map

- \_\_\_\_\_ 12.    Label the SP symbol with the keyword "SABER".

### MAP

1. Touch EXIT
2. Touch MAP
3. Touch LABELS
4. Touch OK
5. Touch SABER
6. Touch map near SP symbol

## TRAINING EVALUATION - PERFORMANCE TEST

TASK PROFICIENCY:    7                    6                    5                    4                    3                    2                    1  
                         expert            very high            high            moderate            low            very low            not proficient

\_\_\_\_\_ 13. Remove both the SP symbol and the label "SABER" at the same time.

### MAP

1. Touch EXIT
2. Touch SPOTS
3. Touch REMOVE SPOTS

\_\_\_\_\_ 14. Place a triangle, made of dotted lines, on your IVIS map.

### MAP

1. Touch EXIT
2. Touch SYMBOLS
3. Touch -----
4. Touch map X 4 to make triangle

\_\_\_\_\_ 15. Recover the SP symbol and the label "SABER" that you deleted earlier.

### MAP

1. Touch EXIT
2. Touch SPOTS
3. Touch RECOVER SPOTS

\_\_\_\_\_ 16. Delete only the triangle that you created with dotted lines.

### MAP

1. Touch EXIT
2. Touch SYMBOLS
3. Touch SELECT MAP OBJECT bar
4. Touch triangle (turns red)
5. Touch DEL

## TRAINING EVALUATION - PERFORMANCE TEST

TASK PROFICIENCY:    7                    6                    5                    4                    3                    2                    1  
                         expert            very high            high            moderate            low            very low            not proficient

- \_\_\_\_ 17. You are completely out of heat ammunition but have all of your other ammunition completely stocked. Prepare and send an IVIS report telling your commander specifically that you have no HEAT, but have all other ammo completely stocked.

### REP

1. Touch EXIT
2. Touch REP
3. Touch LOG
4. Touch ~~AMMO~~
5. Touch "black" for heat ammunition
6. Touch "green" for APDS,etc
7. Touch ENTER
8. Touch SEND

- \_\_\_\_ 18. Adjust the map scale so that it shows the largest area possible (the smallest grid squares).

### MAP

1. Touch EXIT
2. Touch ~~MAP~~
3. Touch ZOOM
4. Touch 1:125,000

## TRAINING EVALUATION - PERFORMANCE TEST

TASK PROFICIENCY:    7                    6                    5                    4                    3                    2                    1  
                         expert            very high           high           moderate           low           very low           not proficient

- \_\_\_\_\_19.    Approximately 15 minutes ago you were engaged in heavy enemy activity (a ground attack) and lost all of the members of your crew.  
                 Prepare a report telling your commander of this.

### REP

1. Touch EXIT
2. Touch REP
3. Touch SITREP
  - a. EN ACT - "heavy"
  - b. type - "defend"
4. Touch NEXT
5. Touch "pers" under crit short
6. Touch NEXT
7. Touch -15
8. Touch ENTER
9. Touch SEND

- \_\_\_\_\_20.    Create a three waypoint route.

### NAV

1. Touch EXIT
2. Touch NAV
3. Touch OK
4. Touch box for wp1
5. Touch map
6. Touch box for wp2
7. Touch map
8. Touch box for wp3
9. Touch map

## TRAINING EVALUATION - PERFORMANCE TEST

TASK PROFICIENCY:    7                    6                    5                    4                    3                    2                    1  
                         expert            very high            high            moderate            low            very low            not proficient

- \_\_\_\_\_ 21. Relay waypoint 3 from the route you entered on IVIS to the driver's "Steer-to" display.

**NAV**

1. Touch EXIT
2. Touch NAV
3. Touch OK
4. Touch circle next to wp3

- \_\_\_\_\_ 22. You have just observed 3 artillery shells falling at your location. Prepare and send the correct IVIS report to your commander to tell him of this situation.

**REP**

1. Touch EXIT
2. Touch REP
3. Touch SHELL
  - a. # - "3"
  - b. type - "ARTY"
  - c. where - touch near present location of tank
4. Touch ENTER
5. Touch SEND

## TRAINING EVALUATION - PERFORMANCE TEST

TASK PROFICIENCY:    7                  6                  5                  4                  3                  2                  1  
                         expert          very high          high          moderate          low          very low          not proficient

- \_\_\_\_\_23. Scroll and lock the IVIS map so that you can see ES950847.

### SCRL

1. Touch EXIT
2. Touch SCRL and hold down
3. Slide cursor to DRAG or VEL
4. Scroll map to see ES950847
5. Touch SCRL
6. Slide finger to LOCK

- \_\_\_\_\_24. Move the IVIS map as quickly as possible so that your tank is back in the center.

### SCRL

1. Touch SCRL and hold down
2. Slide cursor to HOME

- \_\_\_\_\_25. Receive one of your fellow tanker's CONTACT messages.

### RECEIVE

1. Touch RECEIVE
2. Touch a contact report

- \_\_\_\_\_26. Send this report to both your IVIS map and to your commander.

### RECEIVE/ACTION

1. Touch ACT
2. Touch GRID
3. Touch HIGHER

## TRAINING EVALUATION - PERFORMANCE TEST

TASK PROFICIENCY:    7                    6                    5                    4                    3                    2                    1  
                         expert            very high            high            moderate            low            very low            not proficient

\_\_\_\_\_ 27. Set up your IVIS display so that you can receive  
          a mission overlay from the company commander.

### MAP

1. Touch MAP
2. Touch OVERLAY ON

\_\_\_\_\_ 28. Receive an IVIS contact report and center your map  
          at the reported enemy location.

### RECEIVE

1. Touch EXIT
2. Touch RECEIVE
3. Touch a contact report
4. Touch SHOW



Appendix F  
IVIS Training Reactions Questionnaire

NAME \_\_\_\_\_

DATE \_\_\_\_\_

DUTY POSITION DURING THIS EXPERIMENT: \_\_\_\_\_

## **IVIS EXPERIMENT**

### **TRAINING EVALUATION - REACTIONS QUESTIONNAIRE**

#### **Instructions**

Now that you have completed the SIMNET/IVIS training program, as well as the SIMNET & IVIS knowledge tests and the IVIS performance test, we would like to get your personal opinions or reactions to the training. Please take your time and carefully complete this questionnaire. If you have any questions about specific items on this questionnaire, please feel free to ask them. Your honest, frank opinions are very important to us. Your reactions will help us to make any improvements to the current SIMNET/IVIS training program for future use. Please be assured that your opinions will be strictly confidential.

## TRAINING EVALUATION - REACTIONS QUESTIONNAIRE

### PART I

Please indicate the training effectiveness of each of the four major training activities: (1) the classroom lecture and discussion, (2) the structure IVIS practice with the research assistant, (3) the practice crew tactical exercise with IVIS, and (4) the practice platoon tactical mission with IVIS. A training activity is considered effective if you believe that you learned a lot about using IVIS during that activity. A training activity is not effective if you feel you did not learn much about IVIS during that activity.

#### Training Effectiveness

How effective was each of the four major training activities, individually and overall, in teaching you how to use each IVIS function?

EFFECTIVE-----				-----INEFFECTIVE		
Extremely Effective	Quite Effective	Slightly Effective	Neutral	Slightly Ineffective	Quite Ineffective	Extremely Ineffective
1	2	3	4	5	6	7

#### 1. CON (Contact)?

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_

#### 2. Automated Contact Report (main gun - red star)?

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_

#### 3 CFF (Call For Fire)?

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_

## TRAINING EVALUATION - REACTIONS QUESTIONNAIRE

### Training Effectiveness

How effective was each of the four major training activities in teaching you how to use each IVIS function?

EFFECTIVE-----				-----INEFFECTIVE		
Extremely Effective	Quite Effective	Slightly Effective	Neutral	Slightly Ineffective	Quite Ineffective	Extremely Ineffective
1	2	3	4	5	6	7

4. **MAP "FEATURES"?**

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_

5. **MAP "LOS" (Line of Sight)?**

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_

6. **MAP "OVERLAY" (Ability to Receive Overlays)?**

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_

7. **MAP "SPOTS"?**

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_

## TRAINING EVALUATION - REACTIONS QUESTIONNAIRE

### Training Effectiveness

How effective was each of the four major training activities in teaching you how to use each IVIS function?

EFFECTIVE-----				-----INEFFECTIVE		
Extremely Effective	Quite Effective	Slightly Effective	Neutral	Slightly Ineffective	Quite Ineffective	Extremely Ineffective
1	2	3	4	5	6	7

8. **MAP** "SYMBOLS"?

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_

9. **MAP** "LABELS"?

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_

10. **MAP** "ZOOM"?

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_

11. **REP** (Reports) "CONTACT"?

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_

## TRAINING EVALUATION - REACTIONS QUESTIONNAIRE

### Training Effectiveness

How effective was each of the four major training activities in teaching you how to use each IVIS function?

EFFECTIVE-----				-----INEFFECTIVE		
Extremely Effective 1	Quite Effective 2	Slightly Effective 3	Neutral 4	Slightly Ineffective 5	Quite Ineffective 6	Extremely Ineffective 7

12. **REP** (Reports) "Call For Fire (CFF)"?

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_

13 . **REP** (Reports) "SPOT"?

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_

14. **REP** (Reports) "SITREP"?

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_

15. **REP** (Reports) "SHELL"?

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_

## TRAINING EVALUATION - REACTIONS QUESTIONNAIRE

### Training Effectiveness

How effective was each of the four major training activities in teaching you how to use each IVIS function?

EFFECTIVE-----				-----INEFFECTIVE		
Extremely Effective	Quite Effective	Slightly Effective	Neutral	Slightly Ineffective	Quite Ineffective	Extremely Ineffective
1	2	3	4	5	6	7

16. **REP** (Reports) "LOG"?

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_

17. **REP** (Reports) "ADJUST"?

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_

18. **NAV** "ROUTE DESIGNATION"?

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_

19. **SCRL** "HOME"?

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_

## TRAINING EVALUATION - REACTIONS QUESTIONNAIRE

### Training Effectiveness

How effective was each of the four major training activities in teaching you how to use each IVIS function?

EFFECTIVE-----				-----INEFFECTIVE		
Extremely Effective	Quite Effective	Slightly Effective	Neutral	Slightly Ineffective	Quite Ineffective	Extremely Ineffective
1	2	3	4	5	6	7

20. SCRL "VEL"?

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_

21. SCRL "DRAG"?

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_

22. SCRL "LOCK"?

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_

23. RECEICE (Receiving Reports)?

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_



## TRAINING EVALUATION - REACTIONS QUESTIONNAIRE

### Training Effectiveness

How effective was each of the four major training activities in teaching you how to use each IVIS function?

EFFECTIVE-----				-----INEFFECTIVE		
Extremely Effective	Quite Effective	Slightly Effective	Neutral	Slightly Ineffective	Quite Ineffective	Extremely Ineffective
1	2	3	4	5	6	7

24. **RECEIVE "SHOW"?**

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_

25. **RECEIVE "ACT" (Relaying Reports)?**

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_

26. **SEND (Sending Reports)?**

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_

## TRAINING EVALUATION - REACTIONS QUESTIONNAIRE

### PART II

Please indicate whether we need to devote more or less time training commanders to use each IVIS function?

#### Training Time Needed

Based on your experiences with our SIMNET/IVIS training program, how much training time should be devoted to each training activity for each IVIS function?

MORE-----				-----LESS		
Extremely More	Quite More	Slightly More	No Change	Slightly Less	Quite Less	Extremely Less
1	2	3	4	5	6	7

#### 1. CON (Contact)?

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_

#### 2. Automated Contact Report (main gun - red star)?

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_

#### 3 CFF (Call For Fire)?

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_

## TRAINING EVALUATION - REACTIONS QUESTIONNAIRE

### Training Time Needed

Based on your experiences during our SIMNET/IVIS training program, how much training time should be devoted in future programs, by activity, to training commanders to use each IVIS function?

MORE-----			-----LESS			
Extremely More	Quite More	Slightly More	No Change	Slightly Less	Quite Less	Extremely Less
1	2	3	4	5	6	7

#### 4. MAP "FEATURES"?

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_

#### 5. MAP "LOS" (Line of Sight)?

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_

#### 6. MAP "OVERLAY" (Ability to Receive Overlays)?

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_

#### 7. MAP "SPOTS"?

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_

## TRAINING EVALUATION - REACTIONS QUESTIONNAIRE

### Training Time Needed

Based on your exeperiences during our SIMNET/IVIS training program, how much training time should be devoted in future programs,

MORE-----				-----LESS		
Extremely More	Quite More	Slightly More	No Change	Slightly Less	Quite Less	Extremely Less
1	2	3	4	5	6	7

8. **MAP** "SYMBOLS"?

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_

9. **MAP** "LABELS"?

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_

10. **MAP** "ZOOM"?

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_

11. **REP** (Reports) "CONTACT"?

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_

## TRAINING EVALUATION - REACTIONS QUESTIONNAIRE

### Training Time Needed

Based on your experiences with our SIMNET/IVIS training program, how much training time should be devoted in future programs, by activity, to training commanders to use each IVIS function?

MORE-----				-----LESS		
Extremely More	Quite More	Slightly More	No Change	Slightly Less	Quite Less	Extremely Less
1	2	3	4	5	6	7

12. **REP** (Reports) "Call For Fire (CFF)"?

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_

13 . **REP** (Reports) "SPOT"?

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_

14. **REP** (Reports) "SITREP"?

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_

15. **REP** (Reports) "SHELL"?

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_

## TRAINING EVALUATION - REACTIONS QUESTIONNAIRE

### Training Time Needed

Based on your experiences with our SIMNET/IVIS training program, how much training time should be devoted in future programs, by activity, to training commanders to use each IVIS function?

MORE-----				-----LESS		
Extremely More	Quite More	Slightly More	No Change	Slightly Less	Quite Less	Extremely Less
1	2	3	4	5	6	7

16. **REP** (Reports) "LOG"?

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_

17. **REP** (Reports) "ADJUST"?

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_

18. **NAV** "ROUTE DESIGNATION"?

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_

19. **SCRL** "HOME"?

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_

## TRAINING EVALUATION - REACTIONS QUESTIONNAIRE

### Training Time Needed

Based on your experiences with our SIMNET/IVIS training program, how much training time should be devoted in future programs, by activity, to training commanders to use each IVIS function?

MORE-----				-----LESS		
Extremely More	Quite More	Slightly More	No Change	Slightly Less	Quite Less	Extremely Less
1	2	3	4	5	6	7

20. **SCRL "VEL"?**

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_

21. **SCRL "DRAG"?**

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_

22. **SCRL "LOCK"?**

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_

23. **RECEICE (Receiving Reports)?**

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_

## TRAINING EVALUATION - REACTIONS QUESTIONNAIRE

### Training Time Needed

Based on your experiences with our SIMNET/IVIS training program, how much training time should be devoted in future programs, by activity, to training commanders to use each IVIS function?

MORE-----			-----LESS			
Extremely More	Quite More	Slightly More	No Change	Slightly Less	Quite Less	Extremely Less
1	2	3	4	5	6	7

24. **RECEIVE "SHOW"?**

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_

25. **RECEIVE "ACT"** (Relaying Reports)?

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_

26. **SEND** (Sending Reports)?

- a. classroom lecture and discussion? \_\_\_\_\_
- b. SIMNET/IVIS practice with research assistant? \_\_\_\_\_
- c. practice crew tactical exercise with IVIS? \_\_\_\_\_
- d. practice platoon tactical mission with IVIS? \_\_\_\_\_
- e. overall training program? \_\_\_\_\_



## TRAINING EVALUATION - REACTIONS QUESTIONNAIRE

### PART III

-----  
We would like to get your expert opinion on issues specific to the Intervehicular Information System (IVIS) training program. Please indicate your agreement/disagreement with each of the items below using the five-point rating scale provided below.

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree

Write the number of your rating in the space provided after each item. Your ratings are very important in helping us to evaluate the effectiveness of the IVIS training program.

Remember, your ratings are strictly confidential.  
-----

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree

1. The classroom instructor seemed to know a lot about IVIS. \_\_\_\_\_
2. The classroom instructor did not adequately explain how to use the IVIS functions. \_\_\_\_\_
3. The training I received in the simulator by the research assistant was not well organized. \_\_\_\_\_
4. The research assistant seemed to know a lot about IVIS. \_\_\_\_\_
5. I didn't use some IVIS functions because I didn't understand them. \_\_\_\_\_
6. My research assistant didn't show me how to use some IVIS functions. \_\_\_\_\_

Which ones? \_\_\_\_\_  
\_\_\_\_\_

TRAINING EVALUATION - REACTIONS QUESTIONNAIRE

1  
Strongly  
Disagree

2  
Disagree

3  
Neither Agree  
Nor Disagree

4  
Agree

5  
Strongly  
Agree

7. The SIMNET video tape contained important information. \_\_\_\_\_
8. More unstructured time to practice using  
each of the IVIS functions would be helpful. \_\_\_\_\_
9. The research assistants were helpful. \_\_\_\_\_
10. The training program was disorganized. \_\_\_\_\_
11. The IVIS handouts during the lecture were helpful. \_\_\_\_\_
12. The visual aids used during the lecture were helpful. \_\_\_\_\_
13. The lecture was well organized. \_\_\_\_\_
14. The IVIS knowledge test covered material  
I was taught during training. \_\_\_\_\_
15. The ratings of my IVIS proficiency  
after training are accurate. \_\_\_\_\_
16. The SIMNET knowledge test covered material  
I was never taught during training. \_\_\_\_\_

## TRAINING EVALUATION - REACTIONS QUESTIONNAIRE

### PART IV

Please answer the following questions as honestly and accurately as possible. Your comments and suggestions will provide us with valuable information on how to train soldiers to use IVIS in the real tank.

1. The training was \_\_\_\_\_.
2. The best part of the training was \_\_\_\_\_.
3. The worst part of the training was \_\_\_\_\_.
4. The training needs more \_\_\_\_\_.
5. The training needs less \_\_\_\_\_.
6. The lecture could be improved by \_\_\_\_\_.
7. The practice session with the research assistant could be improved by \_\_\_\_\_.
8. The crew practice session could be improved by \_\_\_\_\_.
9. The IVIS training used if IVIS is put in the M1A1 Block II tank must include \_\_\_\_\_.
10. Write below any additional comments you would like to make regarding the IVIS training program \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Appendix G  
IVIS Interface Questionnaire

NAME \_\_\_\_\_

DATE \_\_\_\_\_

DUTY POSITION DURING THIS EXPERIMENT \_\_\_\_\_

### IVIS EXPERIMENT

### IVIS QUESTIONNAIRE

#### PART I

-----  
We would like to get your expert opinion on issues specific to the Intervehicular Information System (IVIS). Please indicate your agreement/disagreement with each of the items below using the five-point rating scale provided below.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree

Write the number of your rating in the space provided after each item. Your ratings are very important in helping us to evaluate the effectiveness of the IVIS system. Your ratings will help us to determine any necessary modifications to be made to the IVIS system to make it a more effective aid for tankers.

Remember, your ratings are strictly confidential.

-----

1	2	3	4	5
Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree

1. The location of the commander's IVIS display in the M1 simulator was acceptable. \_\_\_\_\_
2. I would have difficulty navigating from one point to another using only the IVIS driver's "Steer-to" display. \_\_\_\_\_
3. When my tank was moving, the IVIS map automatically scrolled at an acceptable rate. \_\_\_\_\_
4. The IVIS map at the 1:25,000 scale (about 3km by 3km) is difficult to read. \_\_\_\_\_

# IVIS QUESTIONNAIRE

1	2	3	4	5
Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree

5. The IVIS map at the 1:50,000 scale  
(about 5km by 5km) is difficult to read. \_\_\_\_\_
6. The IVIS map at the 1:125,000 scale  
(about 11km by 11km) is difficult to read. \_\_\_\_\_
7. I could easily read the information  
presented on the IVIS display. \_\_\_\_\_
8. The touch screen was easy to use to  
select IVIS menu options. \_\_\_\_\_
9. The IVIS commander's display, approximately  
nine inch diagonal, is too small. \_\_\_\_\_
10. The location of the IVIS "Own Location and  
Heading Window" is acceptable. \_\_\_\_\_
11. The location of the IVIS "Report Menu"  
is acceptable. \_\_\_\_\_
12. The IVIS display functions were difficult  
to use while on the move. \_\_\_\_\_
13. The IVIS display information was difficult  
to read while on the move. \_\_\_\_\_
14. The IVIS map is more helpful for  
navigating than a paper map. \_\_\_\_\_
15. I spent more time looking at the  
IVIS display than I did looking  
through the vision blocks and sights. \_\_\_\_\_
16. I spent more time looking at the IVIS  
display than I tactically should have. \_\_\_\_\_
17. As I gained experience with IVIS, I spent  
more time using the vision blocks  
and sights and less time looking at  
the IVIS display. \_\_\_\_\_
18. I gave the driver more control over the  
navigation of the tank than I would have  
without the IVIS display. \_\_\_\_\_

# IVIS QUESTIONNAIRE

	1 Strongly Disagree	2 Disagree	3 Neither Agree Nor Disagree	4 Agree	5 Strongly Agree
19. I often used my paper map for navigating when I had IVIS.					_____
20. I spent less time communicating with the driver than I would have without the IVIS display.					_____
21. I rarely changed the terrain features which appeared on the IVIS map.					_____
22. The IVIS tank icon was useful for orienting my tank in the proper direction.					_____
23. I frequently changed the scale of the IVIS map.					_____
24. When navigating the current own-vehicle location update rate of every 10 meters is unacceptable.					_____
25. With IVIS, I had more time to acquire enemy targets.					_____
26. The IVIS system replaced the need for a compass for land navigation.					_____
27. I could easily enter waypoint grid coordinates for the IVIS "Route Designation" function.					_____
28. I could easily send waypoints to the IVIS driver's "Steer-to" display.					_____
29. IVIS waypoint updating should be under the driver's control.					_____
30. The IVIS tank icon was useful for orienting my main gun in the proper direction.					_____
31. I had a difficult time changing IVIS "Route Designation" waypoint entries.					_____

# IVIS QUESTIONNAIRE

	1 Strongly Disagree	2 Disagree	3 Neither Agree Nor Disagree	4 Agree	5 Strongly Agree
32. I had a difficult time deleting IVIS "Route Designation" waypoint entries.					_____
33. I would rather see friendly tank icons on the IVIS map, as simulated in this test, than to see only their grid coordinates.					_____
34. When FRAGOs were sent using IVIS, I understood the commander's intent better than when FRAGOs were sent over voice radio					_____
35. When using IVIS instead of the voice radio, I can react better to a battlefield intelligence report.					_____
36. Visual alert signals (e.g., "MESSAGE RECEIVED"), without any auditory signals (beeps), would provide me with an adequate indication about reports and messages being received on my IVIS system.					_____
37. Auditory signals were a hindrance to my performance.					_____
38. Auditory signals distracted me.					_____
39. Auditory signals are needed to alert commanders of incoming IVIS reports, but the signals used in this evaluation should be improved.					_____
40. The way IVIS assigns priorities to reports and messages is difficult to understand.					_____
41. The way IVIS assigns priorities to reports and messages is acceptable.					_____
42. The touch screen capability of IVIS made it easy for me to prepare reports and messages.					_____



# IVIS QUESTIONNAIRE

1	2	3	4	5
Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
43.	I sent more messages/reports over IVIS than I normally do using only the radio.			_____
44.	I sent more accurate reports over IVIS than I normally do using only the radio.			_____
45.	I gave more complete reports/messages on IVIS than I normally do using only the radio.			_____
46.	I spent more time sending messages on IVIS than tactically I should have.			_____
47.	It takes longer to send messages on IVIS than on the radio.			_____
48.	I liked the way IVIS offset the crosshair cursor so that my finger didn't cover the location I wanted to select.			_____
49.	The IVIS touch screen was difficult to use.			_____
50.	The "beeping" in the headphones to indicate an incoming message was a helpful feature.			_____
51.	The navigation screen for selecting waypoints for a route was too sensitive.			_____
52.	The "SPOT" report function on IVIS allowed me to enter all pertinent SPOT REPORT information.			_____
53.	The ability to show various IVIS map features helped me navigate more effectively.			_____
54.	The IVIS "SITREP" contained all pertinent SITUATION REPORT information.			_____
55.	I still prefer to send reports over the radio rather than over IVIS			_____
56.	In adjusting fire, the meter increments of 500, 200, and 100 allowed me to pinpoint the target acceptably.			_____

# IVIS QUESTIONNAIRE

	1	2	3	4	5
	Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
57. Allowing the commander to adjust the cursor location on the map before removing his finger reduced input errors.					_____
58. I usually touched the map, rather than lased to the target, to enter grid coordinates into IVIS reports.					_____
59. I would prefer entering grid coordinates with a keypad, rather than touching the map, to enter route waypoints.					_____
60. I would prefer to also be able to enter grid coordinates with a keypad, in addition to touching the map, to enter route waypoints.					_____
61. I frequently added map symbols to my IVIS map display.					_____
62. I frequently added map labels to my IVIS map display.					_____
63. To keep the display simple, I usually removed the mission overaly from my operation overlay.					_____
64. The ability to give me the operational overlay on the IVIS map is an important IVIS function.					
65. With IVIS, I spent too much time reading reports sent by other TCs.					_____
66. With IVIS, I need some kind of acknowledgment message that a report I sent is properly received.					_____
67. Overall, IVIS did not improve my performance.					_____
68. Overall, IVIS should be included in the upgraded tank.					_____

# IVIS QUESTIONNAIRE

**1**  
Strongly  
Disagree

**2**  
Disagree

**3**  
Neither Agree  
Nor Disagree

**4**  
Agree

**5**  
Strongly  
Agree

69. Overall, given the changes I request below, IVIS should be included in the upgraded M1A1 tank. \_\_\_\_\_

My requested IVIS changes are:

1. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
2. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
3. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
4. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
5. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## IVIS QUESTIONNAIRE

### PART II

Now that you have rated specific issues related to the Intervehicular Information System (IVIS), I would like to get your expert opinion first on how easy it was to learn each IVIS function, next on how easy it was to use each IVIS function, and finally, how helpful each of the IVIS functions are. Please indicate the **ease of use**, **helpfulness**, and **ease of learning** of each function using the seven-point rating scales provided. Please take your time.

Remember, your ratings are strictly confidential.

#### **Ease of Learning**

How easy was it for you to learn  
to correctly use this IVIS function?

<b>EASY TO LEARN</b> -----				<b>DIFFICULT TO LEARN</b>		
Extremely Easy 1	Quite Easy 2	Slightly Easy 3	Neutral 4	Slightly Difficult 5	Quite Difficult 6	Extremely Difficult 7

1. **CON** (Contact)? \_\_\_\_\_
2. Automated Contact Report (main gun - red star)? \_\_\_\_\_
3. **CFF** (Call For Fire)? \_\_\_\_\_
4. **MAP** "FEATURES"? \_\_\_\_\_
5. **MAP** "LOS" (Line of Sight)? \_\_\_\_\_
6. **MAP** "OVERLAY" (Ability to Receive Overlays)? \_\_\_\_\_
7. **MAP** "SPOTS"? \_\_\_\_\_
8. **MAP** "SYMBOLS"? \_\_\_\_\_

## IVIS QUESTIONNAIRE

### Ease of Learning

How easy was it for you to learn  
to correctly use this IVIS function?

EASY TO LEARN-----				-----DIFFICULT TO LEARN		
Extremely Easy	Quite Easy	Slightly Easy	Neutral	Slightly Difficult	Quite Difficult	Extremely Difficult
1	2	3	4	5	6	7

- |  |       |
|--|-------|
| 9. MAP "LABELS"?                         | _____ |
| 10. MAP "ZOOM"?                          | _____ |
| 11. REP (Reports) "CONTACT"?             | _____ |
| 12. REP (Reports) "Call For Fire (CFF)"? | _____ |
| 13. REP (Reports) "SPOT"?                | _____ |
| 14. REP (Reports) "SITREP"?              | _____ |
| 15. REP (Reports) "SHELL"?               | _____ |
| 16. REP (Reports) "LOG"?                 | _____ |
| 17. REP (Reports) "ADJUST"?              | _____ |
| 18. NAV "ROUTE DESIGNATION"?             | _____ |
| 19. SCRL "HOME"?                         | _____ |
| 20. SCRL "VEL"?                          | _____ |
| 21. SCRL "DRAG"?                         | _____ |

## IVIS QUESTIONNAIRE

### Ease of Learning

How easy was it for you to learn  
to correctly use this IVIS function?

EASY TO LEARN-----				-----DIFFICULT TO LEARN		
Extremely Easy 1	Quite Easy 2	Slightly Easy 3	Neutral 4	Slightly Difficult 5	Quite Difficult 6	Extremely Difficult 7

22. SCRL "LOCK"? \_\_\_\_\_

23. RECEIVE (Receiving Reports)? \_\_\_\_\_

24. RECEIVE "SHOW"? \_\_\_\_\_

25. RECEIVE "ACT"? \_\_\_\_\_

26. SEND (Sending Reports)? \_\_\_\_\_

## IVIS QUESTIONNAIRE

### Ease of Use

How difficult was it for you to  
perform or use this function on IVIS?

EASY TO USE-----				-----DIFFICULT TO USE		
Extremely Easy	Quite Easy	Slightly Easy	Neutral	Slightly Difficult	Quite Difficult	Extremely Difficult
1	2	3	4	5	6	7

- |  |       |
|--|-------|
| 1. CON (Contact)?                                  | _____ |
| 2. Automated Contact Report (main gun - red star)? | _____ |
| 3. CFF (Call For Fire)?                            | _____ |
| 4. MAP "FEATURES"?                                 | _____ |
| 5. MAP "LOS" (Line of Sight)?                      | _____ |
| 6. MAP "OVERLAY" (Ability to Receive Overlays)?    | _____ |
| 7. MAP "SPOTS"?                                    | _____ |
| 8. MAP "SYMBOLS"?                                  | _____ |
| 9. MAP "LABELS"?                                   | _____ |
| 10. MAP "ZOOM"?                                    | _____ |
| 11. REP (Reports) "CONTACT"?                       | _____ |
| 12. REP (Reports) "Call For Fire (CFF)"?           | _____ |
| 13. REP (Reports) "SPOT"?                          | _____ |
| 14. REP (Reports) "SITREP"?                        | _____ |

## IVIS QUESTIONNAIRE

### Ease of Use

How difficult was it for you to  
perform or use this function on IVIS?

**EASY TO USE**-----**DIFFICULT TO USE**

Extremely Easy 1	Quite Easy 2	Slightly Easy 3	Neutral 4	Slightly Difficult 5	Quite Difficult 6	Extremely Difficult 7
------------------------	--------------------	-----------------------	--------------	----------------------------	-------------------------	-----------------------------

- |                                  |       |
|----------------------------------|-------|
| 15. REP (Reports) "SHELL"?       | _____ |
| 16. REP (Reports) "LOG"?         | _____ |
| 17. REP (Reports) "ADJUST"?      | _____ |
| 18. NAV "ROUTE DESIGNATION"?     | _____ |
| 19. SCRL "HOME"?                 | _____ |
| 20. SCRL "VEL"?                  | _____ |
| 21. SCRL "DRAG"?                 | _____ |
| 22. SCRL "LOCK"?                 | _____ |
| 23. RECEIVE (Receiving Reports)? | _____ |
| 24. RECEIVE "SHOW"?              | _____ |
| 25. RECEIVE "ACT"?               | _____ |
| 26. SEND (Sending Reports)?      | _____ |



## IVIS QUESTIONNAIRE

### Helpfulness

How helpful was this function to effectively  
performing combat missions on SIMNET?

**HELPFUL**-----**UNHELPFUL**

Extremely  
Helpful

1

Quite  
Helpful

2

Slightly  
Helpful

3

Neutral

4

Slightly  
Unhelpful

5

Quite  
Unhelpful

6

Extremely  
Unhelpful

7

1. **CON** (Contact)? \_\_\_\_\_
2. Automated Contact Report (main gun - red star)? \_\_\_\_\_
3. **CFF** (Call For Fire)? \_\_\_\_\_
4. **MAP** "FEATURES"? \_\_\_\_\_
5. **MAP** "LOS" (Line of Sight)? \_\_\_\_\_
6. **MAP** "OVERLAY" (Ability to Receive Overlays)? \_\_\_\_\_
7. **MAP** "SPOTS"? \_\_\_\_\_
8. **MAP** "SYMBOLS"? \_\_\_\_\_
9. **MAP** "LABELS"? \_\_\_\_\_
10. **MAP** "ZOOM"? \_\_\_\_\_
11. **REP** (Reports) "CONTACT"? \_\_\_\_\_
12. **REP** (Reports) "Call For Fire (CFF)"? \_\_\_\_\_
13. **REP** (Reports) "SPOT"? \_\_\_\_\_
14. **REP** (Reports) "SITREP"? \_\_\_\_\_

## IVIS QUESTIONNAIRE

### Helpfulness

How helpful was this function to effectively  
performing combat missions on SIMNET?

HELPFUL-----				-----UNHELPFUL		
Extremely Helpful	Quite Helpful	Slightly Helpful	Neutral	Slightly Unhelpful	Quite Unhelpful	Extremely Unhelpful
1	2	3	4	5	6	7

- |                                  |       |
|----------------------------------|-------|
| 15. REP (Reports) "SHELL"?       | _____ |
| 16. REP (Reports) "LOG"?         | _____ |
| 17. REP (Reports) "ADJUST"?      | _____ |
| 18. NAV "ROUTE DESIGNATION"?     | _____ |
| 19. SCRL "HOME"?                 | _____ |
| 20. SCRL "VEL"?                  | _____ |
| 21. SCRL "DRAG"?                 | _____ |
| 22. SCRL "LOCK"?                 | _____ |
| 23. RECEIVE (Receiving Reports)? | _____ |
| 24. RECEIVE "SHOW"?              | _____ |
| 25. RECEIVE "ACT"?               | _____ |
| 26. SEND (Sending Reports)?      | _____ |

# IVIS QUESTIONNAIRE

PART III

Now that you have responded to a series of very specific items, we want to get your general impressions and thoughts about the IVIS system and this experiment. Please answer each question below as carefully and completely as possible. Remember, every bit of information you give will be critical in helping us (1) to determine the effectiveness of the IVIS system, and (2) to determine any necessary modifications which need to be made to IVIS to make it a more effective aid for tankers.

1. What suggestions could you offer for improving the IVIS system?
2. What features of the IVIS system were most helpful or critical for effective[ly] performing combat missions? Why?

## IVIS QUESTIONNAIRE

3. What features of the IVIS system were least helpful or critical for effectively performing combat missions? Why?
4. What do you think about evaluating new equipment, such as IVIS, in SIMNET? Are tests like the current one appropriate for predicting how well new tank equipment, such as IVIS, will improve crew and platoon performance?

# IVIS QUESTIONNAIRE

5. Are SIMNET tests, like the IVIS test, useful for allowing soldiers to provide comments and suggestions on design and functions of new tank subsystems, such as IVIS?
6. List below any other comments/suggestions you would like to offer about the IVIS system or the current testing effort.

Appendix H  
Task Difficulty Questionnaire

Name \_\_\_\_\_

Date \_\_\_\_\_

Duty Position for this Exercise \_\_\_\_\_

### TASK DIFFICULTY QUESTIONNAIRE

Before you complete both crew and platoon exercises in SIMNET-D (either with or without IVIS), we would like you to rate the difficulty of performing selected small-unit commander tasks in an actual tank in the field. The tasks you will rate are primarily land navigation and command, control and communication (C<sup>3</sup>) tasks.

For each of these ratings, circle the number between 1 and 7 which best reflects the difficulty you have experienced performing each task in an actual tank in the field.

Please take your time and think carefully about your experiences, both good and bad, as you rate these tasks. Any comments you may wish to include about your ratings can be written on the other side of the sheet. Include the number of that task with your comments, so that we will know which task you are commenting on.

Name \_\_\_\_\_

Date \_\_\_\_\_

Duty Position for this Exercise \_\_\_\_\_

### TASK DIFFICULTY QUESTIONNAIRE

Now that you have completed both crew and platoon exercises in SIMNET-D (either with or without IVIS), we would like you to rate the difficulty of performing selected small-unit commander tasks in an actual tank in the field. The tasks you will rate are primarily land navigation and command, control and communication (C<sup>3</sup>) tasks.

For each of these ratings, circle the number between 1 and 7 which best reflects the difficulty you have experienced performing each task in an actual tank in the field.

Please take your time and think carefully about your experiences, both good and bad, as you rate these tasks. Any comments you may wish to include about your ratings can be written on the other side of the sheet. Include the number of that task with your comments, so that we will know which task you are commenting on.



## Task Difficulty Questionnaire

### TASK

### Task Difficulty in Actual Tank in the Field--No IVIS

		Easy Task-----Difficult Task						
		Extremely Easy	Quite	Slightly	Neutral	Slightly	Quite	Extremely Difficult
		1	2	3	4	5	6	7
1.	Determining your tank grid location.	1	2	3	4	5	6	7
2.	Determining your tank orientation.	1	2	3	4	5	6	7
3.	Maintaining your tank orientation.	1	2	3	4	5	6	7
4.	Determining the grid location of other objects (e.g., spot reports).	1	2	3	4	5	6	7
5.	Performing Map-Terrain association.	1	2	3	4	5	6	7
6.	Navigating from one point to another.	1	2	3	4	5	6	7
7.	Maintaining platoon formation.	1	2	3	4	5	6	7
8.	Reorienting after reacting to enemy fire (e.g., air or artillery strikes).	1	2	3	4	5	6	7
9.	Preparing a battlefield report.	1	2	3	4	5	6	7
10.	Sending a battlefield report.	1	2	3	4	5	6	7
11.	Relaying a battlefield report.	1	2	3	4	5	6	7
12.	Receiving a battlefield report.	1	2	3	4	5	6	7
13.	Receiving a FRAGO.	1	2	3	4	5	6	7
14.	Issuing (relaying) a FRAGO.	1	2	3	4	5	6	7

## Task Difficulty Questionnaire

### TASK

### Task Difficulty in Actual Tank in the Field--No IVIS

		Easy Task-----Difficult Task						
		Extremely Easy	Quite	Slightly	Neutral	Slightly	Quite	Extremely Difficult
		1	2	3	4	5	6	7
15.	Executing a FRAGO.	1	2	3	4	5	6	7
16.	Selecting firing positions.	1	2	3	4	5	6	7
17.	Reporting graphic control points (e.g., CPs, LDs, etc.).	1	2	3	4	5	6	7
18.	Occupying battle positions.	1	2	3	4	5	6	7
19.	Adjusting fires.	1	2	3	4	5	6	7
20.	Consolidating unit after enemy contact.	1	2	3	4	5	6	7
21.	Moving under direct/indirect fires.	1	2	3	4	5	6	7
22.	Conducting displacement at platoon level.	1	2	3	4	5	6	7
23.	Controlling platoon fires.	1	2	3	4	5	6	7
24.	Controlling tactical movement.	1	2	3	4	5	6	7
25.	Conducting a hasty attack.	1	2	3	4	5	6	7
26.	Conducting a movement to contact.	1	2	3	4	5	6	7
27.	Conducting a hasty defense.	1	2	3	4	5	6	7

Name\_\_\_\_\_

Date\_\_\_\_\_

Duty Posistion for this Exercise\_\_\_\_\_

### **TASK DIFFICULTY QUESTIONNAIRE**

Now that you have completed both crew and platoon exercises in SIMNET-D, we would like you to rate the difficulty of performing selected small-unit commander tasks in a SIMNET-D simulated M1. The tasks you will rate are primarily land navigation and command, control and communication (C<sup>3</sup>) tasks.

For each of these ratings, circle the number between 1 and 7 which best reflects the difficulty you have experienced performing each task in the SIMNET-D simulated M1.

Please take your time and think carefully about your experiences, both good and bad, as you rate these tasks. Any comments you may wish to include about your ratings can be written on the other side of the sheet. Include the number of that task with your comments, so that we will know which task you are commenting on.

## Task Difficulty Questionnaire

### TASK

### Task Difficulty in SIMNET-D Simulated M1--No IVIS

		Easy Task-----Difficult Task						
		Extremely Easy	Quite	Slightly	Neutral	Slightly	Quite	Extremely Difficult
		1	2	3	4	5	6	7
1.	Determining your tank grid location.	1	2	3	4	5	6	7
2.	Determining your tank orientation.	1	2	3	4	5	6	7
3.	Maintaining your tank orientation.	1	2	3	4	5	6	7
4.	Determining the grid location of other objects (e.g., spot reports).	1	2	3	4	5	6	7
5.	Performing Map-Terrain association.	1	2	3	4	5	6	7
6.	Navigating from one point to another.	1	2	3	4	5	6	7
7.	Maintaining platoon formation.	1	2	3	4	5	6	7
8.	Reorienting after reacting to enemy fire (e.g., air or artillery strikes).	1	2	3	4	5	6	7
9.	Preparing a battlefield report.	1	2	3	4	5	6	7
10.	Sending a battlefield report.	1	2	3	4	5	6	7
11.	Relaying a battlefield report.	1	2	3	4	5	6	7
12.	Receiving a battlefield report.	1	2	3	4	5	6	7
13.	Receiving a FRAGO.	1	2	3	4	5	6	7
14.	Issuing (relaying) a FRAGO.	1	2	3	4	5	6	7

## Task Difficulty Questionnaire

### TASK

### Task Difficulty in SIMNET-D Simulated M1--No IVIS

		Easy Task-----Difficult Task						
		Extremely Easy	Quite	Slightly	Neutral	Slightly	Quite	Extremely Difficult
		1	2	3	4	5	6	7
15.	Executing a FRAGO.	1	2	3	4	5	6	7
16.	Selecting firing positions.	1	2	3	4	5	6	7
17.	Reporting graphic control points (e.g., CPs, LDs, etc.).	1	2	3	4	5	6	7
18.	Occupying battle positions.	1	2	3	4	5	6	7
19.	Adjusting fires.	1	2	3	4	5	6	7
20.	Consolidating unit after enemy contact.	1	2	3	4	5	6	7
21.	Moving under direct/indirect fires.	1	2	3	4	5	6	7
22.	Conducting displacement at platoon level.	1	2	3	4	5	6	7
23.	Controlling platoon fires.	1	2	3	4	5	6	7
24.	Controlling tactical movement.	1	2	3	4	5	6	7
25.	Conducting a hasty attack.	1	2	3	4	5	6	7
26.	Conducting a movement to contact.	1	2	3	4	5	6	7
27.	Conducting a hasty defense.	1	2	3	4	5	6	7

Appendix I  
SIMNET Questionnaire

NAME \_\_\_\_\_

DATE \_\_\_\_\_

DUTY POSITION DURING THIS EXPERIMENT \_\_\_\_\_

## IVIS EXPERIMENT

### SIMNET SURVEY

#### PART I

-----  
We would like to get your expert opinion on issues specific to the Simulation Networking (SIMNET) system. Please indicate your agreement/disagreement with each of the items below using the five-point rating scale provided below.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree

Write the number of your rating in the space provided after each item. Your ratings are very important in helping us to evaluate the effectiveness of the SIMNET system for testing.

Remember, your ratings are strictly confidential.  
-----

1. There were too many SIMNET equipment breakdowns. \_\_\_\_\_
2. I think I did about as well in SIMNET as I would do in a real tank. \_\_\_\_\_
3. The radios in SIMNET were easy to use. \_\_\_\_\_
4. I experienced fewer equipment breakdowns in SIMNET than I expected to experience. \_\_\_\_\_
5. I experienced more equipment breakdowns in SIMNET than I usually do in a field training exercise with real tanks. \_\_\_\_\_

## SIMNET SURVEY

### PART II

Please answer each question below. Be frank and complete. Your comments are very important for helping us to evaluate the SIMNET system.

1. List at least five suggestions for improving the SIMNET system.

1. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
2. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
3. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
4. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
5. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2. What features of SIMNET were most realistic?

3. What features of SIMNET were most unrealistic?



## **SIMNET SURVEY**

4. What do you think about evaluating new equipment, such as IVIS, in SIMNET? Are tests like the current one appropriate for predicting how well new tank equipment, such as IVIS, will improve crew and platoon performance?

5. List below any other comments or suggestions you would like to offer about the SIMNET system or the current testing effort.